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THE NEW ENGLAND BOTANICAL CLUB

Vol. 24. May, 1922. No. 281.

NOTES ON TREES AND SHRUBS OF SOUTHEASTERN NORTH AMERICA.

W. W. Ashe.

During the summer of 1921 *Viburnum densiflorum* Chapman and *Quercus hybrida* (Chapman) Small were collected in Newton County, Texas. This extends the distribution of the Viburnum 400 miles westward (hitherto southern Alabama) and that of the oak 300 miles westward (hitherto southern Mississippi). These plants were growing under what would seem to be the same conditions as in the type locations in northwestern Florida, the Viburnum on the edge of small sandy hummocks in longleaf pine forests, and the oak on dry sand bluffs near or bordering streams. Since the name for this oak proposed by Small is already occupied it is suggested on account of its habitat that it be called

Quercus **arenicola** n. n. *Q. hybrida* (Chapman) Small, Fl. S. E. U. S. Ed. 1, 350 (1903), not *Q. hybrida* Bechst., Forstbot. Ed. 5, 211 (1829); nor *Q. hybrida* Brot. Fl. Lusit. **2**: 31 (1804); nor *Q. hybrida* Houba, Chên. de l'Am. Sept. 310 t. (1887). This oak is strongly marked in its characters, although it is not recognized by Sargent in his manual. Notwithstanding its slightly drooping lower branches at a distance it resembles and almost rivals in beauty of foliage *Q. laurifolia* Mx., from which, however, and from *Q. obtusa* Ashe it is separated by having much smaller fruit (acorns only 9–12 mm. thick and much constricted at base), and extremely flat shallow cups with very small scales; while from narrow-leaved forms of *Q. nigra* L. it is separated by the prevail-

ingly broadly oblanceolate leaves, which except on vigorous shoots are entire and acute. The leaves when entire resemble those of *Q. laurifolia,* although when 3-notched on vigorous shoots they are characteristic. Many of the trees in eastern Texas and adjacent parts of Louisiana have only entire foliage, and for such, which without the distinctive fruit are with difficulty separated from large-leaved forms of *Q. laurifolia,* there is suggested the name:

Q. ARENICOLA **integra** n. var. This differs from the type in having all the leaves on the tree entire; fruit as in type. Sandy bluffs along Sabine River, Texas, and Louisiana (type from Haddon Ferry, La. No. 1100).

QUERCUS OBTUSA (Willd.) Ashe. Torreya **18**: 4, 72 (May 8, 1918.) *Q. hybrida* (Mx.) Ashe Proc. Soc. Am. For. **11**: 1; 88 (1916) not *Q. hybrida* (Chapman) Small. *Q. rhombica* Sarg. Bot. Gaz. **65**: 5, 430 (May 15, 1918). *Q. aquatica* var. *laurifolia* (Mx.) Houba, op. cit. 307 (1887). Houba gives an excellent illustration showing characteristic foliage of this tree, but mistakes it for the typical *laurifolia.* This tree is common throughout the entire coastal plain region of the Southern States and has been generally confused with *Q. laurifolia.* In Texas it occurs as far inland as Harrison County, in Louisiana to Sabine Parish and in Alabama as far north as Tuscaloosa, where it has been extensively planted as a shade tree and where it is regarded as being *Q. laurifolia* Mx. It seems to be as distinct from *Q. laurifolia* in southern Louisiana where the two are frequently associated as it is in Georgia and North Carolina. It is locally esteemed for its timber which is regarded as equal to that of *Q. laurifolia,* the best of the water oak group.

Q. OBTUSA **obovatifolia** (Sarg.) n. c. *Q. rhombica* var. *obovatifolia* Sarg. l. c. Specimens of this variety, which differs from the type only in its spatulate leaves with rounded apices, were noted in Caldwell Parish, Louisiana. On one specimen the acorns were oblong in place of ovoid.

QUERCUS **moultonensis** n. n. *Q. hybrida,* Houba, Chênes de l'Am. Sept., 310 (1887). *Q. phellos* L. × *Q. shumardii* Buckl. A number of fine specimens of this were noted in the Moulton Valley of the Tennessee River in Lawrence County, Ala., where both of the supposed parents are common. The leaf blades are oblong, with 5–7 mostly entire spreading or ascending lobes, and with tuft of pubescence in

the axils of the veins, such as are characteristic only of *shumardii*. The fruit while only slightly larger than that of *phellos* has a much deeper and thicker cup with large scales, W. W. A. No. 1080. The cups in this collection are not quite so pointed at base as figured by Houba, but there is considerable variation in *shumardii* in this respect, and there is a yet wider variation in hybrids. Houba's reference to the tufts of pubescence in the axils of the veins points only to *shumardii* as one parent; while only *phellos* as the other parent would determine glabrous foliage in connection with the narrow outline.

Acer barbatum **sinuosum** n. c. *A. sinuosum* Rehd., T. and S. **2**: 255 (1913). This form has been found in the Wichita Mountains, Comanche County, Oklahoma, thus extending its distribution more than 300 miles north of the type and hitherto only recorded locality. Rehder has recently reduced it to a varietal status and the material from the Wichita Mountains confirms this disposition by more clearly indicating the relationship of *sinuosum* to *barbatum*. In the Wichita Mountain specimens the leaves are glaucous beneath as in *barbatum* and have the customary leaf form of *barbatum*, there being three prominent lobes with parallel sides, 3-notched at the tips. The first pair of nerves also rises from the petiole and not from the second pair. However, on these same trees the upper leaves have 3 subentire triangular lobes as described for *sinuosum*. The only difference between *sinuosum* and *barbatum* Mx. (*A. floridanum* (Chap.) Pax.) is the exposure of the nerves of the second pair of lobes at the point where they join the petiole and the somewhat stouter bright red-brown twigs.

Quercus nigra **heterophylla** n. c. *Q. aquatica* var. Aiton, Hort. Kew. Ed. 2, **5**: 290 (1813). This differs from the type only in the leaves especially those on vigorous shoots, which are deeply and irregularly 3–5-lobed, some of the divisions being ligulate, 5–8 cm. long, 1–2 cm. wide, acute obtuse or even rounded at the ends. On the Atlantic Coast an occasional shoot or rarely a tree occurs having such foliage. In western Louisiana and eastern Texas, however, many trees occur on which most of the foliage is of this character. It is with some doubt that Aiton's name is taken up but his description seems to apply very well to this form.

THE ATLANTIC COASTAL PLAIN ELEMENT IN THE FLORA OF THE GREAT LAKES.

Donald Culross Peattie.

(*Continued from page 70.*)

Topography of the Great Lakes Shores at the Close of the Glaciation.

But were there really any warm shallow lagoons and bays? There seem to have been, for a countless number of shallow bays and old sand spits enclosing lagoons have been traced by many geologists and shown to have existed extensively during the Algonquin stage. It is significant that the stations for coastal plain isolations along the Great Lakes occur precisely where some of the spits and lagoons still exist, as at Presque Isle and Cedar Point on Lake Erie, and around Pine and Dune Park at the head of Lake Michigan where a long era of spit-forming and lagoon-forming is just drawing to a close.

Topography and Flora of the Post-Tolleston Beaches.

The Post-Tolleston is that period of transition between the glacial Lake Chicago and modern Lake Michigan and is synchronous with the Algonquin stage over the Great Lakes as a whole, particularly with the latter phases of the Algonquin. During this period the strand line of Lake Chicago receded in places about six miles and this it did slowly, building up barrier beaches and forming lagoons behind them, and then receding a little more, to build up another bar and lagoon. The lagoons are, many of them, of recent date and their beaches are still intact.

The result is a topography which is scenically monotonous, being a series of ridges and hollows which are about one hundred meters wide, the hollows never more than three or four meters above the level of the present lake, and the ridges scarce two meters above the hollows. There are by actual count 32 such ridges in the four miles between the village of Gibson and the lake shore[1].

The hollows nearest to the present shore are still what might properly be called lagoons; they are occupied by swamp and pond types among which are coastal plain plants, while on the sandy ridges near the shore are many strand plants of the Atlantic coast. But as we

[1] Leverett and Taylor, loc. cit. 357.

progress inward we do not find the hollows filled with water; they are only moist swales, and the ridges are covered by that peculiar vegetation which E. J. Hill has called the "pine barrens of Indiana" and Dr. H. C. Cowles has classified as evergreen dunes or dune heath. Both the swales and the pine ridges show a less-markedly coastal plain character. Further inland still the hollows are nearly as dry as the ridges and are distinguished by very few coastal plain plants (chiefly arenicolous if any) and more and more frequently by prairie types or by the oak barrens which are, for the most part, Alleghenian and Carolinian.

This spot and a few similar ones along the Great Lakes show all that are left of conditions which approximate those which must have been prevalent on the margins of Lake Algonquin. Judging from the large number of old spits and beach ridges which have been traced out for the glacial lakes giving rise to Lake Erie and Lake Michigan, it is reasonable to imagine their shores to have been an intricate series of lagoons, ridges, strands and low dunes, harboring the newly-migrated coastal plain and strand types. This is the more evident when we see that considerable numbers of coastal plain species occur to-day in such places, and rarely occur in others.

Flora of the Outlets of the Glacial Lakes.

It might reasonably be expected that where there were important inlets and outlets of the glacial lakes system, there would be isolations of coastal plain plants. And this is precisely what we find. The narrow St. Clair River, which at the present day forms the connective between Lake Huron and Lake Erie, has at all stages been the only connection. This then, is the gate through which all coastal plain migrations necessarily took place. And it is interesting to record that the coastal plain flora of Port Huron and its vicinity, at the outflow of Lake Huron, is large. So also are the floras of Saginaw Bay and Grand Rapids, which are, respectively at the east and west extremities of the Grand River Valley, the one-time connective across Michigan, seen in Figure 3.

The flora of the Hudson-Mohawk Valley and of the Lake Ontario basin of New York State, particularly around Oneida Lake, contains almost as many coastal plain species as the head of Lake Michigan. The area shows, of course, a good many types which come up from the Atlantic seaboard and do not extend further inland, but they also, with the presence of a large number of the coastal plain types which

do follow the Great Lakes, serve to point the path by which these plants must have travelled. Consequently I have thought it not too extraneous to place in the list at the end of this paper, the coastal plain types in the Mohawk-Hudson Valley and Ontario Basin, whether or not they reach the Great Lakes. It gives me pleasure to acknowledge the kind assistance of Prof. Wiegand in preparing this part of the work.

The connectives through central Ontario and the Ottawa River Valley, which are so conspicuous on the map of the Algonquin stage, are not well known to me in their floristic aspects. But the Ottawa Valley has at least a few coastal plain species to show, such as *Juncus pelocarpus, Utricularia resupinata*[1], *Elatine americana*[2], *Carex exilis*[3], *Sporobolus uniflorus*[4], and *Isoëtes riparia.*

And lastly, the sand dunes of the Illinois River, of which we are fortunate in possessing a catalogue of the flora[5], have about eight true coastal plain species. A glance at any of the maps of the glacial lakes will show that the Illinois River functioned as the outlet for Lake Chicago during all the period of which we are speaking. This outlet was, judging from geological evidences, a broad and deep one, lined on its sides by many local sand deposits. It is hardly necessary to state that the presence of some twelve coastal plain species there is in part due to the migration along the shores of the glacial lakes and their outlets.

In the case of the Illinois River, however, as in the case of its tributary the Kankakee, it must be remembered that they have probably been open to more than one coastal plain influence—that is, since they have at different times been connected with the St. Lawrence Basin and with that of the Mississippi, they perhaps owe the origin of their coastal plain elements to both valley systems. Thus such plants as *Rynchospora corniculata* and its variety *interior*, have probably reached Illinois and Indiana by way of the Mississippi Valley and not by way of the Great Lakes. This may be inferred from the fact that these plants are found today well up in the Mississippi Basin and are not found across the Great Lakes shores. To the same path of migration *Mikania scandens* probably owes its presence on the Kanka-

[1] Macoun, Proc. & Trans. Roy. Soc. Can. xii. 30 (1894).
[2] Fernald, Rhodora, xix. fig. 12 (1917).
[3] Fernald, Proc. Am. Acad. xxxvii. 482 (1902).
[4] Macoun, Ottawa Nat. xxiii. 192 (1910).
[5] Gleason, loc. cit.

kee River in Indiana, only some thirty miles south of the old Lake Chicago Basin. The Kankakee itself flows through the site of an old glacial lake bed. But this glacial lake drained into the Mississippi Basin and not into Lake Chicago, and as *Mikania scandens* is not found on the Great Lakes, although extending by way of the Mohawk and Hudson to the Ontario Basin, it is best treated as a plant of the southern coastal plain reaching a northern limit in Indiana, and not one of the migrants of the Great Lakes. Another coastal plain and piedmont plant reaching a northern limit on the Kankakee is *Betula nigra*, and there are others of the same sort.

The Negative Evidence.

There is a certain amount of negative evidence in favor of the glacial lakes as a pathway of migration for coastal plain plants. In the first place, we know only a single coastal plain species[1] on the Great Lakes which is not also found fairly far north on the true coastal plain—far enough north for it to have migrated by way of the New York State connectives with the glacial lakes. In other words, coastal plain plants ranging from the Gulf around Florida to about the latitude of Delaware, *but not northward*, are almost wholly absent from the Great Lakes, though they may often reach far up the Mississippi Basin and be found in southern Illinois, Indiana or Ohio. Such a range have *Styrax americana*, *Taxodium distichum*, *Jussiaea decurrens*, *Spigelia marilandica*, and many others. It is evident, therefore, that few, if any, of the coastal plain plants of our area have come by way of the Mississsippi Basin.

And in the second place, there is the flora of the sand hills of Nebraska, with which there has never been any glacial lake connective which could be satisfactorily demonstrated. And we have already seen that not a single true coastal plain species exists there.

The Zoological Evidence.

There is a little zoological evidence which is corroborative of that of the plants. Animals, being free-moving organisms, are in general less restricted in their ranges than plants. But there are a few animals ordinarily confined to the coastal plain which are isolated in the area

[1] *Eleocharis caribaea* (*capitata*) var. *dispar*, which is an endemic of the Lake Michigan region, derived from true *E. caribaea*, a plant not known on the coastal plain north of Maryland, though further investigations may give it a station far enough north to displace it as an exception to the rule.

around the head of Lake Michigan. The lake itself contains a Mysis, a marine crustacean[1]. And I have it upon the authority of Mr. T. H. Hubbell of the University of Michigan, that the dune grasshopper, *Trimerotropsis maritima interior* is an endemic offshoot of the coastal plain true species. A similar endemic offshoot is another member of the Orthoptera, *Neoconocephalus robustus crepitans*, and still another grasshopper, *Psinidia fenestralis* is found not only along the Atlantic, but on the shores of the Great Lakes and also west of the Mississippi where the soil is sufficiently sandy. And Mr. R. F. Hussey, who has collected animals in Berrien County, Michigan, informs me that one snake which is, in a general way, of the coastal plain, shows the same discontinuous range; it is the pilot snake, *Heterdon contortrix*.

A Tabular View of Inland Extensions of the Coastal Plain Flora.

In conclusion, and in order to give a summary of the inland extensions of the coastal plain flora, I append a tabular view of the stations for each coastal plain species which is found along the Great Lakes and connected waters, so far as I am able to discover. Beside my work in herbaria, I have relied upon a large number of published floras[2]. I have tried to use discrimination with this second- and third-hand information, omitting species of great improbability and using question marks in the case of plants which have, since being reported, been demonstrated by systematists to embrace more than one distinct species, so that it has become impossible to tell just what older writers had in hand when reporting such a species. Thus *Lilium superbum* is really a coastal plain species, but so many things have in the past gone under that name, that I have thought it best to leave it out altogether, despite persistent reports of its occurence inland. So

[1] Chicago Folio of the U. S. Geol. Surv. 10.

[2] Beckwith & Macauly, Plants of Monroe County, New York, and Adjacent Territory, Proc. Rochest. Acad. Sci. iii. 1–150 (1896).

Blatchley, Geology of Porter and Lake Counties, 22nd Ann. Rep. Ind. Geol. & Nat. Res. 92–102 (1897).

Cole, Grand Rapids Flora, 1–160 (1901).

Coulter, S., Catalogue of the Flowering Plants and of the Ferns and their Allies Indigenous to Indiana, 24th Ann. Rep. Dept. Geol. Nat. Res. Ind. 553–1072 (1899).

Day, Plants of Buffalo and its Vicinity, Bull. Buffalo Soc. Nat. Sci. iv, 9–156 (1882).

Deam, Plants New to Indiana, Proc. Ind. Acad. Sci. 144–150 (1918).

Dodge, C. K. Annotated List of Flowering Plants and Ferns of Point Pelée, Ontario and Neighboring Districts, Can. Geol. Surv. v. biol. ser. 2, 8–107 (1914).

—Catalogue of Plants, in A Biological Survey of the Sand Dune Region on the.

also I have had to leave queries for the two coastal plain varieties of *Andropogon scoparius*. They are of such recent distinction that that there has not been time for full reports of their ranges to appear. Species in italics are endemic derivatives of coastal plain types.

In the following list, it may be wondered that a column is not given to Lake Superior. That it is not, is partly due to the fact that I am not familiar with Lake Superior plants and that no adequate accounts of the flora exist. But it is also due to the fact that in all probabilty no important stations for coastal plain extensions occur on Lake Superior. In looking up the ranges of the approximate hundred of coastal plain extensions in the inland, I have been impressed by the fact that the meagerest sprinkling of them occur on Lake Superior; herbarium specimens and reliable reports are in great part lacking for these species in that area.

Probably there has occured no great westward migration of coastal plain plants to Lake Superior. This is the more proven when we recall that Lake Superior was the last of the Great Lakes to be uncovered by the glacier; it was still under the ice when the other lakes were clear of it and probably thriving with marginal vegetation. It is, moreover,

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South Shore of Saginaw Bay, Michigan (edited by Ruthven), Mich. Geol. & Biol. Surv. iv, biol. ser. 2, 72–120 (1911).

—Flowering Plants, Ferns and Fern Allies Growing without Cultivation in Lambton County, Ontario, 16th. Ann. Rep. Mich. Acad. Sci. 137–200 (1914). This range includes Port Huron, Michigan.

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Gleason, Vegetation of the Sand Deposits of Illinois, Bull. Ill. State Lab. Nat. Hist. ix[3], 146–170 (1910).

Goodrich, Flora of Onondaga County, 7–193 (1912) (a compilation accepted with some reservations).

Higley & Raddin, Flora of Cook County, Illinois, and a part of Lake County, Indiana, Bull. Chi. Acad. Sci. ii[1], 1–156 (1891) (a compilation accepted with some reservations but including the results of the splendid collections of E. J. Hill from northern Indiana).

Jennings, Botanical Survey of Presque Isle, Erie County, Pennsylvania, Ann. Carnegie Mus. v. 405–421 (1909).

Kellerman & Werner, Ohio Plants, Geol. Ohio, viii, 56–403 (1893) (a compilation accepted with some reservations).

Mosley, Sandusky Flora, Ohio State Acad. Sci. spec. pap. i. 35-162 (1899).

Paine, Catalogue of Plants found in Oneida County and Vicinity, Rep. Regents. Univ. N. Y. State, 1-140 (1865).

Pieters, Plants of Western Lake Erie, U. S. Fish. Comm. Bull. 77-79 (1901)

Rydberg, Flora of the Sand Hills of Nebraska, Contrib. Nat. Herb. iii. 133-203, (1895).

Schaffner, Catalogue of Ohio Plants, Ohio Biol. ii[1]. 131–237. (1914).

a lake, not of warm coastwise lagoons and sandy shores like the others, but a cold and bleak one surrounded by mountainous country—the habitat of northern types of plants.

	Hudson-Mohawk Valley and Ontario Basin (Finger Lakes).	Shores of Lake Ontario.	Region of Lake Erie.	Detroit & St. Clair Rivers, Lake St. Clair & Port Huron.	Saginaw Bay (Lake Huron)	Grand Rapids (Grand River)	Region of Lake Michigan.	Dunes of Illinois River.
Woodwardia virginica	×		×	×	×	×	×	
Isoëtes Engelmanni	×							
Potamogeton pulcher							×	
Potamogeton bupleuroides	×						××	
Potamogeton hybridus			×		×		×	
Najus gracillima	×		?					
Andropogon scoparius, var. villosissimus	?	?	?	?	?	?	×	?
Andropogon scoparius, var. polyclados (littoralis)	?	?	?	?	?	?	×	?
Panicum debile (verrucosum)							×	
Panicum lucidum							××	
Panicum spretum							××	
Panicum meridionale				×	×		××	
Panicum albemarlense							××	
Panicum oligosanthes							××	
Echinochloa Walteri	×		××	××			××	
Ammophila breviligulata ("arenaria")		×	×	×	×		×	
Aristida tuberculosa							×	×
Eleocharis quadrangulata	×		×	×		×	××	
Eleocharis interstincta							××	
Eleocharis melanocarpa							××	
Eleocharis caribaea (*capitata*), var. *dispar*							××	
Psilocarya scirpoides						××	×	
Psilocarya nitens							××	
Fimbristylis autumnalis	×		×			×	××	×
Scirpus Eriophorum			×				××	
Scirpus Smithii	×		×			×	××	
Fuirena squarrosa[1]			?				××	
Hemicarpha micrantha	×		×			×	×	×

[1] The report from "northern Ohio" (Kellerman & Werner) is probably incorrect, as is also that from central New York State given by Sartwell and quoted by Coville, Revision of U. S. Species of the Genus Fuirena, Bull. Torr. Bot. Club, xvii. 8.

	Hudson-Mohawk Valley and Ontario Basin (Finger Lakes)	Shores of Lake Ontario.	Region of Lake Erie.	Detroit & St. Clair Rivers, Lake St. Clair & Port Huron.	Saginaw Bay (Lake Huron).	Grand Rapids (Grand River)	Region of Lake Michigan.	Dunes of Illinois River.
Rynchospora fusca	×			×	×			
Rynchospora cymosa			×				××	
Rynchospora macrostachya						×		
Scleria reticularis							××	
Scleria reticularis var. pubescens							×	
Carex annectans (true)	×							
Carex alata	×					×	×	
Carex exilis	×							
Peltandra virginica	×		×			×	×	
Orontium aquaticum	×							
Xyris caroliniana[1]	×		×		×		×	
Xyris torta (flexuosa)			×				××	×
Juncus Greenii							×	
Juncus balticus var. littoralis	×	×	×	××	×	×	××	
Juncus articulatus	×		××	×		×	×	
Juncus aristulatus			×					
Juncus dichotomus, var. platyphyllus	×							
Juncus scirpoides	?		×				×	
Juncus pelocarpus	×	×		××		×	××	
Sisyrinchium Farwellii				×				
Sisyrinchium atlanticum							××	
Sisyrinchium apiculatum								
Listera australis	×							
Myrica carolinensis	×	×	×					
Alnus rugosa	×						×?	
Quercus prinoides[2]			×	×		×		
Polygonum pennsylvanicum (true)	×		×				××	
Polygonella articulata	×		×	×	×		×××	×
Nelumbo lutea		×	×				×××	
Cakile edentula	?	?	?	?	?		×××	
Cakile edentula var. *lacustris*		?	×	×			×××	
Drosera longifolia	×		×			×	×××	
Spirea tomentosa var. *rosea*[3]							××	
Lupinus perennis	×		×	×	×		××	×
Lathyrus maritimus var. glaber	×	×	×	×	×		××	

[1] The specimen in the Gray Herbarium which is recorded here from Lake Huron. comes, more strictly, from Georgian Bay.

[2] The reports from Indiana and New York State are of doubtful authenticity.

[3] Fernald, Rhodora xiv. 190, an endemic derivative occurring also in the mountains of North Carolina.

	Hudson-Mohawk Valley and Ontario Basin (Finger Lakes)	Shores of Lake Ontario.	Region of Lake Erie.	Detroit & St. Clair Rivers, Lake St. Clair & Port Huron.	Saginaw Bay (Lake Huron)	Grand Rapids (Grand River)	Region of Lake Michigan.	Dunes of Illinois River.
Linum striatum			×			×	×	
Polygala cruciata			×			×	×	
Euphorbia polygonifolia	×	×	×	×	×		×	
Hypericum gymnanthum			×				×	
Elatine minima[1]	×							
Lechea minor			×				×	
Lechea maritima							×	
Rotala ramosior			×				×	
Ludvigia sphaerocarpa							×	
Hydrocotyle umbellata[2]	×		?				×	
Hottonia inflata			×					
Lyonia ligustrina	×							
Nymphoides lacunosum	×		×					
Convolvulus sepium, var. pubescens			×				×	
Onosmodium virginianum	×		?					
Stachys hyssopifolia						×	×	
Agalinus (Gerardia) purpurea			×			×	×	×
Linaria canadensis			×		×	×	×	
Utricularia clandestina			?					
Utricularia gibba	×		×			×	×	
Utricularia resupinata			×	×		×	×	
Utricularia purpurea							×	
Mikania scandens	×							
Solidago tenuifolia						×	×	
Solidago Mosleyi			×					
Bidens discoides	×			×			×	
Cirsium pumilum[3]	×		?					

[1] Does not go far west in New York State. The specimen is in the Gray Herbarium from Chisago, Minn.

[2] The old report from the Ontario basin was a false one, but the plant recently introduced at Ithaca, N. Y.

[3] *C. Hillii* of the west is too difficult to separate from *C. pumilum* and occupies too general a range there to justify calling it an endemic derivative.

The report of *C. pumilum* from Buffalo is doubtfully correct.

Harvard University.

NOTES ON SOME EAST-AMERICAN SPECIES OF BROMUS.

K. M. Wiegand.

If one may judge from the confusion of specimens in many herbaria, the species of *Bromus* are not yet satisfactorily understood, notwithstanding the revision of Shear (Bull. U. S. Div. Agrost. no. 23, 1900) and the more recent treatments in our various manuals. Perhaps the following brief sectional keys will aid in making clear the relationship of some of the eastern species.

Following Rouy & Foucaud (Fl. France), Ascherson & Graebner (Synop. Mitteleu. Flora) and other authors, *Bromus secalinus, B. racemosus, B. commutatus,* and *B. hordaceus* may be correlated in the following manner:

a. Lemmas firm; panicle not compact though the branches often erect; spikelets plainly pedicelled. *b.*
  b. Lemmas at maturity spreading, each individually involute exposing the rachilla, 7–8 mm. long, all nearly equal, sheaths glabrous except the lowermost; blades pubescent or subglabrous; panicle loose, the branches generally more or less spreading; anthers 1.5–1.8 mm. long. *c.*
    c. Lemmas glabrous.....1. *B. secalinus.*
    c. Lemmas pubescent.....forma *hirtus.*
  b. Lemmas at maturity ascending, not separately involute, therefore the rachilla not ordinarily exposed; lower lemmas longer than the upper; panicle contracted, the branches erect; sheaths and blades pubescent. *c.*
    c. Lemmas 7 mm. long; anthers 2.0–2.5 mm. long; panicle contracted; branches short, in pairs, bearing 1(2) spikelets.....2. *B. racemosus.*
    c. Lemmas 9 mm. long; anthers 1.5 mm. long; panicle more open, with long lower branches bearing several spikelets except in depauperate specimens.....3. *B. commutatus.*
a. Lemmas thin, veiny; panicle compact; the branches very short and spikelets nearly sessile; (lemmas broader than in the last species, 7–9 mm. long; anthers 1–2 mm. long; sheaths and blades pubescent). *b.*
  b. Spikelets pubescent.....4. *B. hordaceus.*
  b. Spikelets glabrous or merely scabrous.....forma *leptostachys.*

1. B. secalinus L., Sp. Pl. 76 (1753).—Common in grain fields and waste places almost throughout the United States and southern Canada.

Forma **hirtus** (F. Schultz) comb. nov. *B. secalinus,* var. *velutinus* Rchb. Icon. Fl. Germ. i. t. lxxv, fig. 1599 (1834), not Schrad. *B. mutabilis* δ *hirtus* F. Schultz, Flora, xxxii. 235 (1849). *B. secalinus* I. *vulgaris,* a. *typicus,* 2. *hirtus* Aschers. & Graeb. Syn. Mitteleu. Fl. ii. 604 (1901).—One specimen seen from America, collected in an oat-

field in dry upland soil, Calapooga Valley, Douglas County, Oregon, 1899, *M. A. Barber*, no. 84. Ascherson & Graebner note that this form has been thought by some to be of hybrid origin (*B. hordaceus* × *secalinus*), but they consider the evidence insufficient.

2. B. RACEMOSUS L. Sp. Pl. ed. 2, 114 (1762).—Rare in America. The only American specimen seen by the writer was from a railway embankment, Grand Pré, Nova Scotia, 1901, *Howe & Lang*, no. 375. Shear cites one from Cape Breton Island, one from Foxcroft, Maine, one from Bucks County, Pennsylvania, and one from Delaware. The writer has seen a duplicate of the Maine specimen. It is probably an undeveloped plant of *B. secalinus*.

3. B. COMMUTATUS Schrad. Fl. Germ. 353 (1806).—Frequent through the greater portion of the United States, but especially abundant in the east.

4. B. HORDACEUS L. Sp. Pl. 77 (1753). *B. mollis* L. Sp. Pl. ed. 2, 112 (1762).—Frequent along the Atlantic coast from Nova Scotia to North Carolina; also in New York State, and common through the northwestern states.

Forma **leptostachys** (Pers.) comb. nov. *B. mollis* β *leptostachys* Persoon, Synop. i. 95 (1805). *B. mollis-lejostachys* (M. & K.) Fries, Sum. Veg. 76 (1846), questionably published. *B. mollis*, var. β *glabrescens* Coss. & Germ. Fl. Env. Paris, 654 (1845). *B. mollis* b) *liostachys* Aschers. Fl. Brand, i. 865 (1864). *B. hordaceus* β *leptostachys* Beck, Fl. Nieder-Oest. 109 (1890).—Scattered through the range of the typical form.

In the *ciliatus* group much confusion is due to the placing of too great emphasis on the character of the exsertion or inclusion of the nodes. Though the upper nodes are almost always exserted at maturity, in *B. ciliatus* and *B. purgans* they frequently are not so in younger or depauperate specimens, and in most cases it is the uppermost node only that is so exserted. The following is a brief synopsis of *B. ciliatus* and its immediate allies:

a. Anthers 1.0–2.5 mm. long; lemmas thin, papery; lateral nerves prominent to the base. *b*.
  b. Lemmas narrow, 2.5–3.2(3.4) mm. wide (10–13 mm. long), usually strongly ciliate between marginal nerves and margin, otherwise glabrous; glumes glabrous, nerves scabrous; upper nodes usually exserted at maturity; flanges at orifice of sheath not apparent; nodes almost always hairy; leaves with rare exceptions with scattered or dense pubescence at least above. *c*.
    c. Lemmas strongly ciliate. *d*.
      d. Sheaths villous; blades usually hairy..... 1. *B. ciliatus*.
      d. Sheaths glabrous or the lowermost slightly villous; blades usually glabrous.....forma *denudatus*.
    c. Lemmas nearly or quite glabrous.....forma *laeviglumis*.

b. Lemmas broader, 3.4–4.0 mm. wide (9–11 mm. long), pubescent over much of the lower part especially near the margin, the nerves stronger; glumes generally pubescent; nodes usually all included; flanges at summit of sheaths usually conspicuous; leaves glabrous or rarely with scattered hairs above. *c.*

c. Sheaths and usually the blades glabrous or nearly so except commonly a pilose ring at summit; nodes glabrous.....2. *B. altissimus.*

c. Sheaths and usually the blades villous; nodes usually pubescent.....forma *incanus.*

a. Anthers (2.8) 3–4 mm. long; lemmas broadly elliptical, 3–4 mm. wide (8–11 mm. long), firmer and more involute when old than in the above, inconspicuously nerved except at summit; pubescence spread over most of the dorsal surface, very variable in density; upper nodes usually exserted; flanges of the sheaths not apparent. *b.*

b. Lemmas hairy *c.*

c. Sheaths and usually the blades villous.....3. *B. purgans.*

c. Sheaths and usually the blades (or all but the lowest) glabrous.....forma *laevivaginatus.*

b. Lemmas nearly or quite glabrous.....forma *glabriflorus.*

1. B. CILIATUS L. Sp. Pl. 76 (1753). *B. canadensis* Michx. Fl. Bor. Am. i. 65 (1803). —Labrador to Pennsylvania and westward to Minnesota, British Columbia, Oregon and Nevada.

Forma **denudatus** f. nov., vaginis glabris infimis interdum exceptis. —Throughout the range of the typical form; not uncommon. TYPE in Gray Herb.; Ashfield, Massachusetts, 1909, *E. F. Williams.*

Forma **laeviglumis** (Scribn.) comb. nov., *B. ciliatus laeviglumis* Scribn. in Shear, Bull. U. S. Div. Agrost. xxiii. 32 (1900) — Occasional; reported from Maine, North Carolina and Ontario. The Gray Herbarium specimen of the Maine plant cited by Shear (*Fernald & Strong*, no. 488) is *B. altissimus* Pursh.

In Central New York *B. ciliatus* is generally an inhabitant of marl springs and calcareous boggy places. In other portions of its range it does not seem to be confined to boggy places or even to calcareous situations, yet no structural difference is apparent between the New York material and that from elsewhere.

2. B. ALTISSIMUS Pursh, Fl. Am. Sept. ii. 728 (1814), teste Shear. *B. ciliatus*, var. *Porteri* Rydb. Contr. U. S. Nat. Herb. iii. 192 (1895), teste Shear. *B. purgans latiglumis* Shear, Bull. U. S. Div. Agrost. xxiii. 40 (1900). *B. latiglumis* Hitchc. RHODORA viii. 211 (1906). — A plant of alluvial bottomlands and alluvial stream banks in calcareous regions: northern Maine and western Connecticut to Pennsylvania, and through New York to Iowa (Montana, Nebraska and Missouri, *Shear*).

Forma **incanus** (Shear) comb. nov. *B. purgans incanus* Shear, Bull. U. S. Div. Agrost. no. 23, 41 (1900). *B. incanus* Hitchcock, RHODORA viii. 212 (1906)—Central Maine, Vermont, western Con-

necticut, Pennsylvania, Delaware and West Virginia through New York to Ohio (South Dakota, Iowa and Texas, *Shear*).

3. B. PURGANS L. Sp. Pl. 76 (1753). *B. ciliatus*, var. *purgans* Gray, Man. 600 (1848).—Rocky woodlands, usually if not always in calcareous regions: New Hampshire and Eastern Massachusetts to Florida, westward to Wisconsin, Illinois and Louisiana (Wyoming, Nebraska and Texas, *Shear*).

Forma **laevivaginatus** f. nov., vaginis glabris infimis interdum exceptis.–Scattered through the range of the typical form. TYPE in Gray Herb.: damp thickets in Enfield Ravine, Ithaca, New York, 1916, *F. P. Metcalf*, no. 5821.

Forma **glabriflorus** f. nov., lemmatibus glabris.—New York: rich hillside opposite Beech Woods, Six Mile Creek, Ithaca, 1916, *F. P. Metcalf*, no. 5813 (TYPE in Gray Herb.).

CORNELL UNIVERSITY, Ithaca, New York.

REPORTS ON THE FLORA OF THE BOSTON DISTRICT,—XXXV.

UMBELLIFERAE.

AEGOPODIUM.

A. PODOGRARIA L. Persisting in waste places, rare; Ipswich, Topsfield, Danvers, Cambridge, Watertown, Brookline, Milton.

AETHUSA.

A. CYNAPIUM L. Waste places; frequent near Boston, few reports elsewhere in the district.

ANGELICA.

A. atropurpurea L. Meadows and grassy swamps; frequent north and west of Boston; in south only at Hingham (*T. T. Bouvé*) and Marshfield.

ANTHRISCUS.

A. SYLVESTRIS (L.) Hoffm. On site of old building, Stony Brook Reservation, Suffolk Co. (*N. T. Kidder*, July 17, 1919).

BUPLEURUM.

B. ROTUNDIFOLIUM L. Gravel sidewalk, not persisting, Cambridge (*W. Deane*, June 15, 1884).

CARUM.

C. CARVI L. Moist grassy places, occasional throughout, but much more abundant northward.

CICUTA.

C. bulbifera L. Swamps, common throughout.

C. maculata L. Meadows and swamps; abundant throughout. Our most poisonous native plant.

COELOPLEURUM.

C. lucidum (L.) Fernald. (*C. actaeifolium* (Michx.) Coult. & Rose; see Rhodora xxi. 144–147, 1919.) Brackish marshes and rocky seashore; occasional along the coast, Amesbury to Scituate.

C. lucidum (L.) Fernald, forma **frondosum** Fernald. (Vide supra.) Beverly Bay (*Charles Pickering*, August, 1847); Swampscott (*C. W. Swan*, Aug. 5, 1886).

CONIOSELINUM.

C. chinense (L.) BSP. Along brookside, May St., Needham (*T. O. Fuller*, Sept. 27, 1884, to Aug. 7, 1892; *J. R. Churchill*, Aug. 31, 1901).

CONIUM.

C. maculatum L. Roadsides and waste places, occasional.

CORIANDRUM.

C. sativum L. A few plants in strand at Crescent Beach, Revere (*M. L. Fernald*, Oct. 20, 1912).

CRYPTOTAENIA.

C. canadensis (L.) DC. Woods and thickets; Andover, Boxford, Beverly (*John A. Lowell*, June, 1847), Oak Island, Revere, Belmont, Waltham.

DAUCUS.

D. Carota L. Fields and waste places, very common throughout.

ERYNGIUM.

E. amethystinum L. Escaped in waste ground, Nahant (*J. R. Churchill*, July 29, 1899, Sept. 5, 1902). A European species.

HERACLEUM.

H. lanatum Michx. Swamps and low thickets, mostly near the coast.

H. Sphondylium L. Waste places at South Boston and the Fenway (corner of Brookline Ave. and Audubon Road).

HYDROCOTYLE.

H. americana L. Moist soil, common.

H. umbellata L. Wet shores of ponds from the southern part of the district to Chebacco Pond, Essex; Martin's Pond, North Reading; and Baddacook Pond, Groton.

LEVISTICUM.

L. OFFICINALE (L.) Koch. Persistent in Wenham and Beverly. Specimens in herb. Peabody Acad. Sci.

LIGUSTICUM.

L. scothicum L. Rocky shores and salt marshes along the coast.

LILAEOPSIS.

L. lineata (Michx.) Greene. Salt marsh, Newburyport (*E. Moulton*, no date), specimen in herb. N. E. Botanical Club; Ipswich (*J. H. Scars*, Aug. 24, 1886), specimen in herb. Peabody Acad. Sci.

OSMORHIZA.

O. Claytoni (Michx.) Clarke. Rich woods, occasional from West Quincy northward.

O. longistylis (Torr.) DC. Rich soils and open woods, apparently frequent from Boston north and west; only southern reports are Hingham (*T. T. Bouvé*) and Medfield.

PASTINACA.

P. SATIVA L. Fields, roadsides and waste places, common.

SANICULA.

S. gregaria Bicknell. Rich woods, local; Andover, Newbury, Rowley, Magnolia, Revere.

S. marilandica L. Woods and thickets, rather common.

SELINUM.

S. CARVIFOLIA L. Vacant lot, South Boston (*C. H. Knowlton & W. P. Rich*, July 29, 1908). Lot now covered by a nine-story wool warehouse. This waif is a native of England, Scandinavia, and Russia.

SIUM.

S. suave Walt. (S. *cicutaefolium* Schrank). See RHODORA xvii. 137, 1915. Brooks, ponds and swamps, common.

S. suave Walt., forma **Carsonii** (Durand) Fassett. See RHODORA xxiii. 113, 1921. Frequent in brooks and larger streams.

TORILIS.

T. LEPTOPHYLLA (L.) Reichenb. Waste field, Lynn (*L. A. Wentworth*, Aug. 1, 1902), specimen in herb. Gray. Native of Europe.

ZIZIA.

Z. aurea (L.) Koch. Fields and meadows, frequent north and west of Boston.

CORNACEAE.

CORNUS.

C. alternifolia L. f. Roadsides and open woods, common, but no reports from southeastern towns.

C. Amomum Mill. Wet thickets and borders of streams, common throughout.

C. canadensis L. Rich damp woods, occasional; reported as far south as Scituate, Norwell and Wrentham.

C. florida L. Dry woods, frequent throughout.

C. obliqua Raf. (*C. Purpusi* Koehne). See RHODORA xii. 122, 1910. Moist soil; Topsfield, Malden, Medford, Lincoln, Cambridge, Watertown, Milton, Dover.

C. paniculata L'Hér. Roadsides and damp thickets, common.

C. rugosa Lamarck (*C. circinata* L'Hér). See RHODORA xii. 122, 1910. Ledges and dry woods; frequent from Hingham, Quincy and Sherborn northward.

C. stolonifera Michx. Banks of streams, rare in our territory.

NYSSA.

N. sylvatica Marsh. Woods and swamps, common; especially abundant in southeastern towns.

C. H. KNOWLTON, WALTER DEANE } *Committee on Local Flora.*

A MISLEADING ADDITION TO THE STATE FLORAS OF NEW ENGLAND.

M. L. Fernald.

A thoroughly reliable regional list, such as we have for Mt. Desert[1], Vermont[2], the Metropolitan Park System of Boston[3], Nantucket[4], Connecticut[5], southern New Jersey[6] and numerous other areas, is an indispensable part of the working equipment of the students of a flora, and it is unfortunate that we lack such presentations of the floras of many interesting areas. A regional list to be of any value (models like those above cited) must be based exclusively upon accurately determined specimens and discriminatingly viséed records; and, since such exacting and scholarly work requires much time as well as extreme patience and accurate knowledge of plants, it is natural that such reliable publications are unusual. Many of them are in the course of preparation but, from their nature and the standards of their authors, they cannot be simply compiled from miscellaneous sources without critical inspection of each item and, consequently, they are slow in reaching completion. In the meantime lists prepared by those who do not realize the confusion created by inaccurate publication are being finished, and, singularly enough, although the painstaking and authoritative works which it has taken years to complete are often kept from publication owing to the lack of financial support, there seems to be money readily available for the publication and distribution of inaccurate lists.

The latest addition to the list of state floras of New England was published with laudible zeal but, unfortunately, without clear understanding of the difficulties of accurately preparing such a list. Some (but by no means all) of the recently recorded Rhode Island stations published in Rhodora and elsewhere have been compiled and an attempt made to translate the names used in Bennett's *Plants of Rhode Island* (1888) into a more modern nomenclature. Even such a method, as every experienced systematist knows, requires the ut-

[1] Rand and Redfield, Flora of Mount Desert Island, Maine. 1894.

[2] Brainerd, Jones and Eggleston, Flora of Vermont. 1900; Flora of Vermont,—Vt. Agric. Expt. Sta. Bull. no. 187. 1915.

[3] Deane, Flora of the Blue Hills, Middlesex Fells, Stony Brook and Beaver Brook Reservations. 1896.

[4] Bicknell, The Ferns and Flowering Plants of Nantucket,—Bull. Torr. Bot. Cl. xxxv. 49-62 (1908) and in succeeding instalments to ibid, xlvi. 423–440 (1919).

[5] Graves and others, Catalogue of the Flowering Plants and Ferns of Connecticut. 1910.

[6] Stone, Plants of Southern New Jersey. 1911.

[7] The Ferns, Fern Allies and Flowering Plants of Rhode Island. A Revision of the first fifty-eight pages of James L. Bennett's "Plants of Rhode Island" published by the Providence Franklin Society in 1888. Published by the Providence Franklin Society, 1920.

most care and constant reference to and exact understanding of the specimens; but the list before us seems to have been prepared without sufficient realization of these requirements and too often without accurately determined material. The present writer has long refrained from the unpleasant task of reviewing this new state flora; but recently several careful workers upon the flora of New England have convinced him that it is important to issue a warning, lest those who are not so situated as to realize the uncritical character of the list may be misled by it into perpetuating errors which its publication has spread broadcast. For instance, Bennett's list, following the usage of his time, enumerated *Eriophorum polystachion* and *Carex adusta*, but it was long since pointed out that the plant of southern New England which formerly passed as *E. polystachion* is *E. viridi-carinatum*[1], while the other American species which has passed as *E. polystachion* is *E. angustifolium*, known in New England only from the state of Maine[2]. The new list, although citing these papers, enumerates both *E. viridi-cariantum* and *E. angustifolium*. Similarly the name *Carex adusta* was used in Bennett's time in an inclusive sense, covering *C. foenea* and *C. aenea*, but true *C. adusta*, as understood by all recent students[3] of the group, is a northern species known in New England only from Maine. All three plants, however, are credited to Rhode Island in the new list, although *C. foenea*, var. *perplexa* is probably the only one of them in the state. Again, the references cited in the new list as the bases for Rhode Island records have been too often misunderstood or carelessly compiled. For example, on p. 19 *Carex Crawei* is listed as occurring in Rhode Island on the basis of the present reviewer's Preliminary List of New England Carices[4], but reference to the latter list is sufficient to show that *C. Crawei* is there credited only to Maine, although it was then suggested (p. 228) that this calcicolous species of the St. Lawrence basin should be sought in Vermont. These few illustrations indicate the unfortunate nature of the compilation upon which the new Rhode Island list was based; and we regret the necessity of stating that much of the wholly new matter in the list cannot be accepted at its face value. When the list first came to his attention the reviewer wrote the Providence Franklin Society asking to see specimens of many of the species which, it is quite safe to say, do not occur in Rhode Island. Members of the Society have most generously sought for such specimens but have been able to supply only two, the vouchers for *Solidago Boottii* and *Centaurea americana*. These vouchers prove to be characteristic specimens of *Solidago nemoralis* and *Centaurea nigra*,

[1] See Fernald, Rhodora, vii. 89 (1905).

[2] See Fernald, Rhodora, x. 136, 138, 141 (1908).

[3] See Fernald, Proc. Am. Acad. xxxvii. 481 (1902), Rhodora, iv. 218 (1902); Robinson & Fernald in Gray, Man. ed. 7, 222 (1908); Mackenzie in Britton & Brown Ill. Fl. ed. 2, i. 386 (1913).

[4] Rhodora, IV. 219 (1902).

respectively, and the northeastern limit of *S. Boottii* still remains Virginia and of *C. americana*, Missouri.

Without prolonged discussion, it seems important to publish the following enumeration of plants, accredited to Rhode Island in the recently published list, which, until unquestionable specimens are found, cannot be accepted as occurring in the state:

p. 4 Equisetum hyemale. Undoubtedly var. *affine*.
Lycopodium complanatum. Undoubtedly var. *flabelliforme*.

p. 5 Picea canadensis. If in Rhode Island cultivated and possibly escaped.
Abies balsamea. If in Rhode Island cultivated and possibly escaped.
Thuja occidentalis. If in Rhode Island cultivated and possibly escaped.

p. 6 Juniperus horizontalis. Although listed by Bennett, as *J. Sabina*, var. *procumbens*, the species is not well vouched for from south of Maine and Vermont.
Sparganium simplex. The Rhode Island records belong to *S. americanum*. See Rhodora, ix. 86–89 (1907).
Potamogeton perfoliatus. The Rhode Island plant is *P. bupleuroides*.

p. 7 Triglochin palustris. Listed by Bennett, but no authentic stations known from south of Maine.
Sagittaria heterophylla, var. angustifolia. Based upon Bennett's *S. variabilis*, var. *angustifolia*, which was the slender-leaved *S. latifolia* (See J. G. Smith, N. A. Sp. Sagittaria and Lophotocarpus, 9, 12).

p. 8 Paspalum laeve. Presumably not *P. laeve*. Bennett's record may have been based on either *P. pubescens*, *P. Muhlenbergii* or *P. psammophilum*, all of which occur in Rhode Island, although not included in the new list.
Panicum philadelphicum. Said to have been reported, as *P. minus*, by Mr. Walter Deane in Rhodora, vi. 151. This paper by Deane deals exclusively with *Polemoniaceae* and *Hydrophyllaceae* and no grass is mentioned. *P. minus* was recorded from Rhode Island by Fernald, Rhodora, viii. 220, but that plant has proved to be *P. Tuckermani*, Rhodora, xxi. 113.

p. 9 Panicum xalapense. A southern species not known in New England. The record was based on Bennett's *P. laxiflorum*, a name used by him to cover plants now included under *P. spretum*, *P. Lindheimeri* and vars. (See Rhodora, xxiii. 226–228), *P. meridionale*, *P. albemarlense*, *P. tsugetorum*, *P. columbianum*, *P. oricola* and *P. sphaerocarpum*, all of which are known from Rhode Island and most of them recorded in papers cited in the bibliography, though not included in the new list.
P. oligosanthes. Based on Bennett's *P. pauciflorum* which was *P. Scribnerianum*, a species common in Rhode Island.

p. 11 Danthonia sericea. Based upon Bennett's record, but there is no satisfactory evidence of the species in New England. *D. compressa*, which is common throughout most of Massachusetts and Connecticut and is doubtless in Rhode Island, is not included in either list and the record of *D. sericea* was presumably based upon that species.

p. 13 Glyceria fluitans. Based upon Bennett's record and doubtless referring to either *G. septentrionalis* or *G. borealis*.

p. 14 Elymus canadensis. Based on Bennett's record, which belongs to *E. riparius* Wiegand, Rhodora, xx. 84, a species properly included in the list.
Cyperus flavescens. Based merely on Bennett's record, which did not belong to *C. flavescens* (See Rhodora, x. 139).

p. 16 Scirpus Eriophorum. Based on Bennett's record which belonged to *S. cyperinus* or *S. atrocinctus*.

Eriophorum angustifolium. See above (p. 97).

Carex Crawfordii. Based upon Bennett's enumeration of *C. scoparia*, var. *minor*, a probable misidentification.

p. 17 C. adusta. See above (p. 97).

p. 18 C. albicans. Based on Bennett's record of *C. Emmonsii*, var. *elliptica*. Bennett's plant was *C. varia* (See Rhodora, iv. 223).

C. novae-angliae. Based only on Bennett's record. Very doubtful.

C. plantaginea. Based only on Bennett's record of *Carex laxiflora*, var. *plantaginea* which is *C. anceps* Muhl. (*C. laxiflora*, var. *patulifolia*).

p. 19 C. Crawei. See above (p. 97).

C. debilis. Based on Bennett's record which belongs to var. *Rudgei*.

C. Pseudo-Cyperus. Based on Bennett's record which belongs to *C. comosa*.

p. 21 Xyris montana. Based upon Rhode Island plants which have been correctly referred in the list to *X. flexuosa* (*X. torta* Sm.).

Juncus scirpoides. Based merely on Bennett's record. The species is unknown in New England (See Rhodora, vi. 41).

p. 25 Spiranthes Romanzoffiana. Very doubtful. Not seen by Ames (Orchid. i. 140) from south of Berkshire Co., Mass., and northern Litchfield Co., Conn.

Epipactis repens. Based on Bennett's *Goodyera repens*, which presumably was *G. tesselata*.

p. 26 Salix amygdaloides. Based upon a Bennett record. Very doubtful.

S. longifolia. Based upon a Bennett record. Very doubtful.

p. 27 Carya laciniosa. Based upon Bennett's record of *C. sulcata*. Surely not indigenous.

Betula nigra. Based solely on Bennett's record, which should be carefully verified since the tree is not generally recognized as indigenous between Long Island and northeastern Massachusetts.

p. 28 Quercus falcata. Based only on Bennett's report of *Q. rubra*, var. *runcinata*. The identity of the latter is wholly questionable. Alphonse de Candolle described it from a single small-fruited tree found growing near St. Louis by Engelmann, who thought it was a hybrid. The foliage was said to be exactly that of *Q. rubra* (in the long-accepted sense). The undiscriminating entry of this name by Bennett is an insecure basis for *Q. falcata* from Rhode Island.

p. 33 Stellaria pubera. Needs most careful verification.

p. 34 Nymphaea rubrodisca. Based on Bennett's record of *N. odorata*, var. *minor*, which is identical with the plant called in the new list *Castalia odorata*, forma *rosea*. See Rhodora, xxiii. 162 (1921).

p. 38 Cardamine hirsuta. Retained on the basis of Bennett's list. Bennett's plant, of course, was *C. pennsylvanica*, which is correctly listed.

p. 42 Rubus canadensis. Surely not true *R. canadensis*. The record is derived from old sources and, of course, referred to some of the dewberries.

Rosa acicularis. Very doubtful, unless a garden escape.

Prunus pumila. Based on Bennett's *P. pumila* which was *P. cuneata*.

p. 45 Phaseolus polystachyus. Based on Bennett's record of *P. diversifolia* which, of course, belonged to the common *Strophostyles helvola*.

p. 48 Vitis cordifolia. Based only on Bennett's record, which doubtless referred to some other species.

p. 56 Gaylussacia dumosa, var. hirtella. The New England shrub erroneously referred in the past to var. *hirtella* is var. *Bigeloviana* Fernald. See Rhodora, xiii. 96–99 (1911).

p. 61 Stachys cordata. Based upon Bennett's record. Surely an error.
p. 62 Lycopus lucidus, var. americanus. Surely not this northwestern plant. Based on a record by Bennett, who may have had *L. sessilifolius*, a Rhode Island species not included in either list.
Physalis viscosa, and others. The entries based solely on Bennett's names are wholly indefinite unless his plants can be found and properly identified.
p. 65 Utricularia vulgaris. The Rhode Island plant is var. *americana* which is properly listed.
p. 66 Houstonia tenuifolia. Based upon Bennett's record which belonged to *H. longifolia*.
Lonicera oblongifolia. Surely an error of determination.
p. 69 Solidago racemosa. Surely an error of determination.
S. racemosa, var. Gillmani. Surely an error of determination.
S. decumbens. Surely an error of determination.
S. stricta. Surely an error of determination.
S. Boottii. The plant so recorded is *S. nemoralis* (See p. 97).
S. tortifolia. Surely an error of determination.
p. 70 Aster sagittifolius. Surely an error of determination.
p. 74 Centaurea americana. Record based on a specimen of *C. nigra* (See p. 97).

These are by no means all the misleading entries, for, although citing many recent revisions (for example, of *Sabatia* and *Puccinellia*) published in Rhodora, the compilers stopped with the citations and failed to derive the Rhode Island data from the papers: that *Sabatia dodecandra* does not occur in the state but there is represented by *S. Kennedyana* and that *Puccinellia fasciculata* is a Rhode Island plant. Enough, however, has been here recorded to indicate that the list cannot be used with safety by anyone not intimate with the sources of the data. It is certainly to be regretted that at the untimely death of Mr. Noble, who originally undertook the work with clear understanding of its complexity, his tentative and unverified manuscript fell into the hands of those wholly unequipped for the task. It is also to be regretted that the zeal of these compilers could not have been led by an experienced and sympathetic guide into safer and less complicated channels.

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